

Manual Handling in the Food Industry

Working with you to achieve
safer workplaces



Corporate statement

WorkSafe Victoria

The Victorian food industry encompasses many diverse sectors, ranging from the manufacture of chocolates to the production of fine wines. The industry makes a crucial contribution to the Victorian economy, with employment growth in the last seven years reaching 29 per cent (approximately 60,000 workers).

The food industry is labour intensive and as a result many workers suffer unnecessary injuries. This publication is designed to help both employers and workers to overcome these challenges.

Manual handling is a long-standing issue in the food manufacturing industry. Each year more than 2000 claims are reported. Over half of these involve manual handling with expected costs exceeding \$36 million. The human costs – for injured workers, their families and others involved – are far greater.

This publication details common tasks that are carried out within the industry and provides solutions to enable workers to complete the tasks safely. I urge you to implement the changes required within your workplace to ensure that you control and reduce the risks.

I commend the Food Industry OHS Working Party and other individuals who have contributed to the development of this publication for their continual dedication to improving health and safety in the food industry.

I hope this publication will help to turn manual handling problems around and trigger an industry-wide commitment to make safety a top priority.

Bob Cameron MP
Minister for WorkCover



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Eliminating or reducing the risk

What should you do to control the number of injuries arising from manual handling in your workplace? The preferred approach is to use the Code of Practice for Manual Handling, which provides practical strategies and detailed checklists and helps you to meet your legal obligations under the Occupational Health and Safety (Manual Handling) Regulations 1999.

This booklet has been prepared as a guide to making your workplace safer by eliminating or controlling some of the most common hazards in the food industry.

1. Involve the workers

Involving your workers is critical because they understand the workplace and are exposed to the risks. Their knowledge and experience will assist in identifying problem areas and providing practical solutions.

The best way to involve workers is by having trained Health & Safety representatives established in your workplace. Health & Safety representatives must be consulted when identifying hazards, and assessing and controlling risks.

2. Identify the hazards, assess and control the risks

Identifying hazards, assessing and controlling risks is the fundamental process of managing occupational health and safety risks within your workplace. This publication outlines 20 common hazardous manual handling tasks within the food industry and provides multiple long and short term control options.

Critical to the success of managing occupational health and safety risks is the implementation of the applicable control options.

The risk controls adopted should be reviewed after a short period to assess their effectiveness and any required changes or improvements made.

If the risks cannot be eliminated immediately, use interim measures to reduce the risk of an injury occurring while you determine how and when you will implement long term controls.

By using this guide to assist in the review of your workplace, you may also identify inefficiencies in your operations that can contribute to the risk of injury. Unnecessary double handling is a common inefficient way of working which can increase the risk of injury. By reducing the risks, you may discover that you also reduce the impact of spillage and product damage.

Further risks to consider

Other significant Occupational Health and Safety risks to consider in the food industry include:

Noise

Noise is a common hazard in the food industry. Refer to the Occupational Health and Safety (Noise) Regulations 1992 and the associated Code of Practice.

Plant Hazards

Hazards associated with plant may include electrical, cutting, slicing, entanglement and crushing. For further information on risks and controls, refer to the Occupational Health and Safety (Plant) Regulations 1995, the associated Code of Practice and the Plant Hazard Checklist.

All Codes of Practice and the Plant Hazard checklists can be obtained from a WorkSafe Victoria office.

Food Safety

Legislation requires a food safety program based on HACCP (Hazard Analysis Critical Control Points) principles to be implemented within workplaces that are subject to the Victorian Food Act 1984.

For further information on Food Safety, contact your local Council or the Food Safety Section of the Department of Human Services on 1300 364 352.

Common manual handling issues

Heat

Manual handling tasks are often undertaken in a hot environment that may expose employees to increased manual handling risk. Increased fatigue due to heat and increased risk when employees are required to handle objects may occur. When using heat resistant gloves or gauntlets, dexterity may be reduced and the employee may use awkward hand, wrist and arm postures and may apply higher force to ensure a firm grip. Where an increased manual handling risk occurs, control measures are required.

Solutions:

- Reduce direct contact with hot objects by wearing personal protective equipment (PPE) such as heat resistant gloves or gauntlets
- Where practicable, a mechanical device should be used to reduce the manual handling risk associated with handling hot objects
- Where practicable, exposure to hot environments should be reduced by regular breaks in a cooler environment
- Cool fluids should be available at all times in the work area
- When a process is delayed or stops for a period of time, employees should, where practicable, move to a cooler environment rather than remain inactive in the hot environment
- Where practicable, it is recommended that a working environment is maintained at a temperature suitable for employees to undertake manual handling tasks

Cold

Working in cold conditions can reduce work capacity and refrigerated materials can become moist or wet, or develop a frost that can cause surface areas to become slippery, difficult to grasp or hold. Increased risk factors include:

- Sudden or unexpected forces may be generated if attempting to stop something slipping or dropping
- Increased force required to maintain handhold to stop slippery materials from shifting or slipping

Solutions:

- Ensure that employees wear appropriate clothing that's not too bulky or restrictive
- Ensure regular rest breaks in a warm place are taken
- Ensure refrigeration plant is well maintained and humidity is kept to a minimum
- Supply appropriate personal protective equipment such as gloves and footwear designed to give good grip on slippery surfaces and protection from the cold
- Ensure the work area is kept tidy and floors are not slippery

Common manual handling issues

Floor surfaces

Floor surfaces may become slippery due to wetness or are cracked and uneven, therefore requiring increased force to move trolleys, tubs and the like. Control measures may include:

Solutions:

- Grated floor surfaces can reduce slipping hazards
- Regular housekeeping ie cleaning, vacuuming, removal of liquids
- Regular repair and maintenance of floor surfaces
- Improved drainage

Trolleys

Trolleys that are overloaded, not maintained, or used for material and tasks that they are not designed for can create hazardous manual handling.

Solutions:

- Large wheels or castors with low-friction bearings reduce force
- Check wheels and castors are regularly cleaned and maintained to reduce forces involved in trolley handling
- Check that trolleys have suitable handle height, width and configuration to reduce bent postures and force while pushing and manoeuvring
- Use vertical handles to cater for employees of different height, reducing the force required to move the trolley

Proper maintenance of all equipment, including mechanical aids recommended in this publication is essential to minimise risk.

Handling sacks of raw material

All food manufacturing sites need to feed raw materials into hoppers, sieves, kettles or other processing plant. This plant frequently requires feeding material from the floor or an elevated work platform. Sacks are often unstable, unbalanced or difficult to hold.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

High force

- lifting, lowering or carrying heavy loads
- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- holding, supporting or restraining a heavy object
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- redesign the workplace to improve working heights
- add a chute to increase the height

Change the objects used in the task

- reduce the weight or size of the sacks

Use mechanical aids

- replace sacks with automatic feeding, bulk feed or suction feed devices
- introduce vacuum lifters, manipulators or scissor lifts with turntables
- use conveyors or forklifts to eliminate carrying of heavy loads.

Other issues

- If working on a platform there may be a restricted work area, insufficient railings or slipping, tripping and falling hazards
- Exposure to dust or other hazardous substances



Handling sacks of raw materials and ingredients



A vacuum lifter reduces force and improves posture



A pallet lifter enables this pallet of sacks to be raised and turned, improving postures and reduces forces

Handling drums, tubs and other containers

Shortcuts, for example, sliding tubs of material over a wet floor, are common. However, they increase manual handling hazards.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

High force

- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Environmental factors

- low temperatures
- handling cold objects
- wearing gloves while working in cold conditions

Risk Controls

Alter systems of work

- two people may be required as a short term control measure after improving the postures involved, if the load is not reduced

Alter the environmental conditions

- eliminate wet and slippery floors

Change the objects used in the task

- change the type of tub used or add wheels

Use mechanical aids

- use trolleys
- introduce conveyors

Other issues

- The type of wheel must be suitable for the work surface and work task



Shortcuts often present manual handling risk



Use of a trolley with a base that can be raised and lowered to suit the employee eliminates carrying and sliding, improves posture and reduces force when loading and unloading the trolley



Use of a trolley to move a large container of ingredient and making it a team push significantly reduces manual handling risks

Tipping material from bags and sacks

All food manufacturing sites need to feed raw materials into hoppers, sieves, kettles or other processing plant. Traditionally, knives are used to open the bags or sacks.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- working with hands above shoulder height
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture
- holding, supporting or restraining an object

High force

- lifting, lowering or carrying heavy loads
- applying jerky forces during lifting and carrying
- exerting high force while in an awkward posture

Environmental factors

- high or low temperatures
- radiant heat

Risk Controls

Alter the workplace

- reduce or raise the working height
- install resting panels for the sacks

Change the objects used in the task

- replace stitched or heat-sealed sacks with tear-top sacks

Use mechanical aids

- replace sacks with automatic feeding devices, bulk feed or suction feed devices
- introduce vacuum lifters, bag manipulators, scissor lifts with turntables
- use conveyors

Other issues

- Steam
- Working at heights
- Restricted workspace
- Using a knife
- Exposure to dust or other hazardous substance



Opening and tipping a sack of ingredient into a hopper



A bulk hopper eliminates handling of individual bags

Tipping material from drums and tubs

Many food manufacturing sites handle drums and tubs. These containers may contain waste, raw material or product. Often the entire container is tilted to empty it. Sometimes contents can be decanted first. Often the material is manually or semi automatically pumped into manufacturing process.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture
- holding, supporting or restraining an object

High force

- lifting, lowering or carrying heavy loads
- applying jerky forces during lifting and carrying
- exerting high force while in an awkward posture

Environmental factors

- high temperatures
- handling cold objects

Risk Controls

Alter the workplace

- provide a stable surface from which to open the container

Change the objects used in the task

- use automatic feeding devices from containers
- change the type of containers used
- ensure that containers are designed with handles to improve grip whilst handling the heavy load
- include a pouring lip in the containers

Use mechanical aids

- use drum lifters
- use scissor lifts with turntables

Other issues

- Steam



Tipping a tub of materials into a bin



This waste collection bin has an automated tipper to eliminate handling and is isolated in a cage



A mechanical drum tipper eliminates the need to handle the drum

Lifting and handling material and product

There is a large variety of raw materials and product require to be loaded and unloaded onto production lines.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

- Repetitive or sustained postures, movements or forces AND long duration**
- bending the back more than 20 degrees
 - reaching more than 30 cm from the body
 - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
 - exerting force while in an awkward posture
- High force**
- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
 - exerting high force while in an awkward posture
- Environmental factors**
- handling cold objects

Risk Controls

- Alter the workplace**
- horizontal loading of rolls reduces the need to twist the roll onto a vertical spindle and provides better visibility for the handler
- Change the objects used in the task**
- reduce the roll weight or material weight
- Use mechanical aids**
- introduce manipulators or slings or other plant that can incorporate a lifting mechanism that operates from floor or pallet level
 - automate the lifting process



Spindles may not be of an adjustable height, creating hazard when manoeuvring the roll



This specialised mechanical aid to handle rolls of wrapping material reduces force and improves postures and movements during handling



This powered pallet truck eliminates carrying of the bags and enables the pallet to be placed at the best position for loading and unloading

Lifting kettle lids

Many food manufacturers have kettles or cooking pots. These are often elevated and all require frequent cleaning. Often product requires to be inspected while cooking or additional ingredients inserted. Many lids are very heavy; most are of a non-transparent material.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

- Repetitive or sustained postures, movements or forces AND long duration**
- bending the back more than 20 degrees
 - reaching more than 30 cm from the body
 - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
 - excessive bending of the wrist
 - exerting force with one hand or one side of the body
 - exerting force while in an awkward posture
- Environmental factors**
- high temperatures
 - radiant heat

Risk Controls

- Alter the workplace**
- have a grated floor surface to reduce slipping hazard
- Change the object**
- extend the nozzle of the cleaning hose
 - install a counterbalance or a lock hinge to the lid
 - include an inspection window, or similar, in the kettle
 - introduce positive pressure so that the steam is directed away from the operator
 - install an automatic material feed system so that the kettle is only opened for cleaning
- Other issues**
- Direct contact with the steam or splashing product can result in serious burns



For this kettle, the lid must be supported by hand while it is cleaned, inspected or ingredients added. This requires sustained force and makes other tasks more difficult.



A counterbalanced and lockable hinge has been fitted to this lid so the need to hold it open by hand is eliminated

Decorating cakes

Cake decorating is indicative of some food manufacturing tasks that require dexterity for small items. Large producers are able to automate the process however there are many smaller cake manufacturers that undertake this task manually.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- bending the head more than 20 degrees
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- excessive bending of the wrist
- exerting force with one hand or one side of the body
- gripping with the fingers pinched together or held wide apart
- holding and supporting an object or tool

Risk Controls

Alter the workplace

- install support seating for the decorator

Alter the environmental conditions

- improve lighting to highlight the work surface of the cake

Alter the systems of work

- introduce job rotation in combination with other risk controls

Change the objects used in the task

- install automatic icing feeders

Use mechanical aids

- install variable height work platforms
- install turntables for the cakes



Sustained and repetitive hand decorating has many risks



An automatic icing feeder, a turntable so the cake can be rotated and putting the cake at a good working height reduces or eliminates many of the risks associated with cake decorating

Sealing bottles

Bottles remain a major food packaging option. Large food manufacturers operate automated systems however, smaller operators, cottage industries and "boutique" product manufacturers may continue to undertake this task by hand. The inserting of corks or capping of bottles can be a highly repetitive task involving high force.

Main body parts affected

- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- working with fingers close together or wide apart
- excessive bending of the wrist
- exerting force with one hand or one side of the body
- exerting force while in an awkward posture

Risk Controls

Altering the workplace

- reduce the risk by reducing the force required
- change to push button or other lever

Altering systems of work

- job rotation to reduce exposure to the risk factors in combination with other risk controls

Change the object used in the task

- redesign the bottle to integrate a sealing mechanism

Use mechanical aids

- automate the process
- use mechanical jigs or lever-operated equipment



The insertion of corks or capping of bottles can be a highly repetitive task



The task has been automated to eliminate the manual sealing task



The sealing mechanism of this bottle has been integrated into the bottle and reduces risk

Handling hot trays and racks

The handling of hot racks and trays is common in the food industry. Racks can be of a considerable weight, and unwieldy shape and size. They are often handled while loaded with product and are frequently hot.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- excessive bending of the wrist
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture

Environmental factors

- radiant heat

Risk Controls

Alter the system of work

- have two operators handle racks-team handling as a short term control measure

Change the object

- use detachable handles to reduce the exposure to hot trays
- reduce weight of trays
- grease trays so that the product can slide

Use mechanical aids

- automate the process



Trays loaded with product are frequently hot, heavy or of an unwieldy shape and size



In these two examples moving the product has been mechanised to eliminate manual handling



Inspecting product

Some food manufacturers operate a separate inspection area on the production line. Inspectors are required to remove any product that does not match quality requirements and are unlikely to pack any product. This task could be one of those which is integral to a job rotation program.

Main body parts affected

- Back
- Neck
- Shoulders
- Arms
- Wrists
- Hands
- Feet



Risks

Repetitive or sustained postures, movements or forces AND long duration

- twisting the back more than 20 degrees
- bending the head more than 20 degrees
- reaching more than 30cm from the body
- twisting, turning, grabbing, picking or wringing actions with fingers, hands or arms
- excessive bending of the wrist
- lifting and lowering

Risk Controls

Alter the workplace

- thinner production line at inspection point to reduce the reach distance
- introduce anti-fatigue matting
- provide support seating for the inspector
- provide an arm rest or sling above the production line
- include a buffer zone

Alter the systems of work

- introduce job rotation in combination with other risk controls

Other issues

- As with most production lines, the inspector will need to keep pace with the product throughput on the conveyor



This conveyor requires excessive reaching forward because of the space between the employee and the edge of the conveyor. There is no buffer zone.



At this conveyor the employee is closer to the conveyor reducing reaching. There is a buffer zone and a bin has been placed beside the employee for rejected product.



For this wide conveyor an employee is positioned on either side, reducing excessive bending and reaching

Weighing product

Manual handling tasks in food manufacturing cannot be separated from production timetables. A significant way of reducing production time is through the removal of practices known as "double-handling". This also eliminates a manual handling task.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- twisting the back more than 20 degrees
- reaching more than 30cm from the body
- lifting or lowering
- exerting force while in an awkward posture

High force

- lifting, lowering or carrying heavy loads
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- elevate the scales from floor height
- integrate weighing scales within the conveyor process

Alter systems of work

- weigh a loaded pallet rather than individual packs to eliminate manual handling

Use mechanical aids

- install an integrated pallet weigher and trolley



Double handling – the weighing of product requires it to be taken off the line, weighed and put back on the line



A conveyor with a built in weigh station means the product doesn't have to be taken off the line to be weighed and then put back on the line. Double handling is eliminated.



A pallet trolley with a built in weighing scale means the product can be weighed without taking it off the pallet and replacing it. Double handling is eliminated.

Labelling packages

There are large varieties of labelling practices in the food manufacturing industry. Large production companies with significant throughput and uniform packaging are likely to have this process automated or semi automated. Smaller operators, or those with production lines of niche or gourmet products, are likely to continue labelling by hand.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- bending the head more than 20 degrees
- reaching forwards or sideways more than 30cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- carrying with one hand or one side of the body
- exerting force with one hand or one side of the body
- holding or supporting an object or tool

High force

- lifting, lowering or carrying heavy loads
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- ensure that the package is labelled at a safe height

Alter the systems of work

- label the carton prior to assembly

Change the object

- request that suppliers provide pre-labelled cartons and packages
- provide labelling guns that are designed to reduce the force required on the trigger or use a counter balance

Use mechanical aids

- automate wherever possible

Other issues

- Cutting hazards
- Dust or fumes



Repetitive and long duration manual labelling involves poor postures, movements and high hand forces



The labelling process has been automated



These cartons have been supplied with labels and marking. This eliminates the need to do this manually on the line.

Loading flat-pack boxes

Boxes are mostly frequently delivered in packets of collapsed or flat-boxes and are often of considerable weight. The flat-packs may be fed into a packaging unit that is machine-paced.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- reaching more than 30 cm from the body
- twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
- lifting or lowering
- gripping with the fingers pinched together or held wide apart
- exerting force while in an awkward posture

High force

- lifting, lowering or carrying heavy loads
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- raise the height of a pallet by using a stand or lifter

Change the objects used in the task

- request supplier to provide fewer flat packs in each packet
- request supplier provides ready-made boxes

Use mechanical aids

- introduce vacuum lifters or mobile scissor lift tables
- introduce automated box assembler

Other issues

- Edges of cardboard and strapping can be very sharp and can easily cut a handler
- Handlers can wear suitable gloves
- Disposal of waste product



Handling flat-packed boxes may often involve repetitive and sustained postures, movements or forces coupled with long duration and high force



This automated box assembler eliminates the handling of the flat packs and manual make up of the boxes



This powered pallet truck eliminates carrying of the bags and enables the pallet to be placed at the best position for loading and unloading

Packing finished product

Most industries require the packing of product. Frequently this involves twisting and lifting to pack individual items into tins, racks or packets.

Main body parts affected

- Neck
- Shoulders
- Arms
- Wrists
- Hands



Risks

Repetitive or sustained postures movements or forces AND long duration

- twisting the back more than 20 degrees
- bending the head more than 20 degrees
- reaching more than 30cm from the body
- twisting, turning, grabbing, picking or wringing actions with fingers, hands or arms
- excessive bending of the wrist
- lifting and lowering
- gripping with the fingers pinched together or held wide apart

Risk Controls

Alter the workplace

- place the tins or boxes in front of the operator to minimise any twisting
- tilt the tin or box towards the operator
- provide support seating for the operator

Alter the systems of work

- introduce job rotation

Use mechanical aids

- automate the product selection task, if possible
- automate the tin sealing process or seek alternative packaging

Other issues

- The operator needs to keep up with the production line speed



This repetitive and long duration packing task creates poor postures of the back, neck, arms and hands



Putting the outer above the line, in front of the employee, at a good height and tilting it improves the postures and movements of the employee. Good seat and foot support are provided and the employee is close to the line reducing bending and reaching.



On this line, an employee is situated on either side of the line to reduce reaching to the side. The employee has a good seat and can get close to the line, the outer is placed in front of the employee at a good height and tilted. This reduces bending and reaching, improving postures and movements.

Palletising product

Most industries require the palletising of product. Frequently this involves bending and twisting when transferring product from racks, trolleys or the production line to pallets for despatch.

Main body parts affected

- Back
- Shoulders
- Arms
- Legs
- Feet



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- twisting the back more than 20 degrees
- reaching more than 30cm from the body
- lifting or lowering
- exerting force while in an awkward posture

High force

- lifting, lowering or carrying heavy loads
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- provide adjustable work areas or tables

Use mechanical aids

- automate if possible
- install a scissor lift with a turntable
- apply a vacuum lifting device or manipulator
- use a conveyor to transport product at a uniform height to the pallet
- use a trolley and scissor lift combination

Other issues

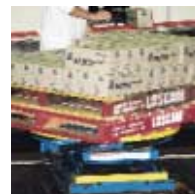
- This process may occur in the loading bay which may expose the operators to variable environmental conditions



Palletising product often requires bending, twisting and reaching



This powered pallet truck eliminates carrying of the bags and enables the pallet to be placed at an appropriate position for loading and unloading



A pallet lifter enables this pallet of boxes to be raised and turned. This improves postures and reduces forces. For a low stacked pallet, placing an empty pallet underneath a full one can put it at the best working height.

Transferring product between wooden and plastic pallets

In the food industry it is a requirement for only non-wooden pallets to be used in food production areas. As a result there is considerable time and effort spent relocating materials from wooden to plastic pallets, and vice versa.

Main body parts affected

- Back
- Shoulders
- Arms
- Legs



Risks

Repetitive or sustained postures, movements or forces AND long duration

- bending the back more than 20 degrees
- twisting the back more than 20 degrees
- reaching more than 30cm from the body
- lifting or lowering
- exerting force while in an awkward posture

High force

- lifting, lowering or carrying heavy loads
- using a finger-grip, a pinch-grip or an open-handed grip to handle a heavy or large load
- exerting high force while in an awkward posture

Risk Controls

Use mechanical aids

- install a pallet inverter, which inverts the product from one pallet to another
- apply a vacuum lifting device or manipulator
- place both pallets on scissor lifts and turntables so that the height variation of the work surface is reduced

Other issues

- The use of a pallet inverter would require the loaded pallets to have a secure and stable load
- Due to the nature of inverters there would need to be an arrangement of safety fences and interlocks



Manual handling risks are increased due to relocation of materials from wooden to plastic pallets and vice versa



A pallet inverter eliminates the manual handling task



A pallet lifter enables this pallet of boxes to be raised and turned. This improves postures and reduces forces. For a low stacked pallet, placing an empty pallet underneath a full one can put it at the best working height.

Shrink wrapping and handling pallets

Wooden pallets are the major platform for moving product and material. Handling pallets is a common manual handling hazard. The dominant pallet stabiliser for finished product remains shrink-wrapping, with more manufacturers moving to automatic or semi-automatic units.

Risks

- Repetitive or sustained postures, movements or forces AND long duration**
- bending the back and neck more than 20 degrees
 - bending the neck more than 20 degrees
 - working with hands above shoulder height
 - twisting, turning, grabbing, picking or wringing actions with the fingers, hands or arms
 - gripping with the fingers pinched together or held wide apart
 - pushing, pulling or dragging
- High force**
- exerting high force while in an awkward posture



Manual shrink wrapping requires poor postures and movements and high forces

Risk Controls

- Change the objects used in the task**
- use an alternative packing product such as tape-wrapping
- Use mechanical aids**
- install an automated pallet wrapper
 - install a vacuum-sealing device
 - manually apply the shrink-wrap while the pallet is on a scissor lift and automated turntable combination to reduce the risk
 - install a mechanical pallet stacker
 - use trolleys or forklifts wherever possible
- Other issues**
- Waste shrink-wrap is a considerable waste product



An automated shrink wrapper eliminates the manual task

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Moving racks of product

All food manufacturers need to transport product from place to place within the plant.

Risks

- Sustained or repetitive postures, movements or forces AND long duration**
- bending the back more than 20 degrees
 - working with hands above shoulder height
 - reaching more than 30cm from the body
 - excessive bending of the wrist
 - pushing, pulling or dragging
 - exerting force while in an awkward posture
- High force**
- applying, fast or jerky forces during pushing or pulling
 - pushing or pulling objects that are hard to move or to stop
 - exerting high force while in an awkward posture
- Environmental factors**
- high or low temperatures



Moving racks of product requires high force, poor postures and movements

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands
- Legs



Risk Controls

- Alter the systems of work**
- introduce job rotation in combination with other risk controls
- Change the objects used in the task**
- reduce the heights of racks to improve stability and visibility
 - use an appropriate well maintained trolley.
- Use mechanical aids**
- use manipulators for product moving between close work areas
 - introduce automated or manual conveyors
- Other issues**
- Housekeeping
 - Racks may not have specific handles or rails from which to grab the rack
 - Racks may have sharp edges and burrs



Use of a specialised trolley for moving this stack of trays reduces forces and improves postures and movements



This floor conveyor for moving trays of product reduces the forces and improves postures during handling

Using trolleys safely

Most food manufacturing sites use trolleys of various designs to transport product, materials and finished product. These control mechanisms can prove to be hazards in themselves if not used appropriately.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

Sustained or repetitive postures, movements or forces AND long duration

- bending the back more than 20 degrees
- backward bending of the back more than 5 degrees
- excessive bending of the wrist
- pushing, pulling or dragging
- exerting force while in an awkward posture

High force

- applying uneven, fast or jerky forces
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Environmental factors

- low temperatures
- handling wide objects
- floor surface may be slippery from residual water or spilt product
- visibility may be restricted



This trolley has been stacked too high requiring high forces and poor postures when stacking and unstacking

Risk Controls

Alter the workplace

- ensure that ramps and level surfaces are used

Change the objects used in the task

- secure the objects to the trolley by means of straps or move objects in cages, containers or on pallets

Use mechanical aids

- ensure the trolley is designed for the specific task
- introduce mechanised trolleys wherever possible
- mechanised "tugs" can be used to transport substantial weights

Other issues

- Housekeeping
- Trolleys (refer to page 5)
- Preventative maintenance (refer to page 5)



This mechanised tug is used to transport loads that can't safely be moved with a hand trolley



This trolley has been chosen to safely move the specific load and is suitable for the work areas where it is used

Opening and closing heavy doors

A manual handling hazard often overlooked is the opening and closing of large refrigerator doors. These doors are often large enough to allow forklift traffic and are usually found in cool rooms. The doors are heavy and thick and, without a good maintenance program, the bearings or gliders of the doors can jam and the force required to operate them increases.

Main body parts affected

- Back
- Shoulders
- Arms
- Wrists
- Hands



Risks

High force

- applying uneven, fast or jerky forces during lifting, carrying, pushing or pulling
- pushing or pulling objects that are hard to move or to stop
- exerting high force while in an awkward posture

Risk Controls

Alter the workplace

- install thick streamers or a flexible door

Alter the systems of work

- introduce a thorough maintenance program that examines the wheels, bearings or gliders of the doors

Use mechanical aids

- install a mechanical aid such as an automatic roll-fast PVC door

Other issues

- Doors must be of a design to maximise visibility
- A flexible door will require a specific clearway around the doorway
- Many doors operate with an electric eye mechanism that automatically opens the door



Opening and closing refrigerator and cool room doors can require high force and poor postures and movements



This automatic roll fast PVC door eliminates the manual task



The use of a flexible door reduces risks

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Head office

Victorian WorkCover Authority
24th Floor
222 Exhibition Street
Melbourne Victoria 3000
GPO Box 4306
Telephone 9641 1555
Fax 9641 1222
Toll-free 1800 136 089

Local offices

Ballarat	5337 1400
Bendigo	5443 8866
Dandenong	8792 9000
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Warrnambool	5562 5600

Publications

Telephone 9641 1333
Fax 9641 1330

Website

www.workcover.vic.gov.au

Email

info@workcover.vic.gov.au

WorkCover Advisory Service

24th Floor
222 Exhibition Street
Melbourne Victoria 3000
Telephone 9641 1444
Fax 9641 1222
Toll-free 1800 136 089